

LUNAR HALOS.

Lunar halos were observed in the various states and territories on the following dates:

Arkansas.—23d, 24th, 27th.

Colorado.—3d, 22d.

Dakota.—24th, 26th.

District of Columbia.—3d.

Florida.—19th, 21st, 24th to 28th.

Georgia.—19th, 27th, 29th.

Illinois.—23d, 26th, 27th, 29th, 31st.

Indiana.—15th, 16th, 17th, 20th, 26th to 29th.

Iowa.—21st, 22d, 24th, 26th, 27th, 29th.

Kansas.—12th, 15th, 21st, 25th, 26th.

Louisiana.—19th, 22d, 24th.

Maine.—20th.

Maryland.—22d, 23d, 24th, 30th.

Massachusetts.—17th.

Michigan.—19th, 22d, 24th.

Minnesota.—24th.

Montana.—22d, 25th.

Nebraska.—10th, 18th, 22d, 28th, 29th.

New York.—21st, 22d.

North Carolina.—22d, 26th.

Ohio.—16th, 19th, 20th, 21st, 23d.

Pennsylvania.—21st, 25th.

South Carolina.—23d.

Tennessee.—19th, 24th, 26th, 27th.

Texas.—1st, 21st to 24th, 26th.

Virginia.—6th, 7th, 15th, 16th, 17th, 19th to 25th, 29th, 30th.

Wisconsin.—20th; 24th.

The phases of the moon during July were: last quarter, 5th, 7.20 a. m.; new moon, 12th, 12.10 a. m.; first quarter, 18th, 7.14 p. m.; full moon, 26th, 9.17 p. m.; perigee, 11th, 8.24 p. m.; apogee, 25th, 4.18 a. m.

MIRAGE.

Mirage was observed at the following stations during the month:

Salina, Kansas, 5th, 7th, 10th, 13th.

Northfield, Minnesota, 19th, 28th, 29th.

Rock Academy, Caswell county, North Carolina, 22d, 27th.

Oswego, New York, 27th: the islands near Kingston and foot of lake, ordinarily not visible, were plainly seen.

MISCELLANEOUS PHENOMENA.

SUN SPOTS.

Prof. David P. Todd, director of the Lawrence Observatory, Amherst, Massachusetts, furnishes the following record of sun spots for July, 1885:

Date— July, 1885.	No. of new.		Disappeared by solar rotation.		Reappeared by solar rotation.		Total No. visible.		Remarks.
	Gr'ps	Spots	Gr'ps	Spots	Gr'ps	Spots	Gr'ps	Spots	
8, 9 a. m.	.....	.....	.....	.....	.....	.....	5	65†	
9, 11 a. m.	0	5†	0	5†	0	5†	5	65†	
10, 2 p. m.	1	5†	1	10†	0	0	5	60†	
11, 7 a. m.	2	5†	0	25†	1	3	7	40†	
12, 4 p. m.	2	30†	2	15†	2	20†	7	60†	
13, 4 p. m.	1	40†	.....	.....	1	20†	7	105†	
15, 5 p. m.	2	10†	0	0	0	0	9	110†	
16, 4 p. m.	1	1	.....	.....	.....	.....	8	110†	
19, 5 p. m.	1	1	.....	.....	.....	.....	7	85†	
20, 7 p. m.	0	10†	.....	.....	.....	.....	6	115†	
22, 4 p. m.	0	10†	.....	.....	.....	.....	5	65†	
23, 5 p. m.	1	15†	.....	.....	1	15†	4	55†	
27, 11 a. m.	0	0	.....	.....	0	0	2	35†	
29, 5 p. m.	0	0	0	0	0	0	3	25†	
30, 4 p. m.	1	10†	0	0	0	0	4	35†	

Faculae were seen at the time of every observation.

† Approximated.

Prof. L. G. Carpenter, of the Michigan State Agricultural College, Lansing, reports sun spots during July as follows:

3d, 1.10 p. m., seven groups, seventy-three spots; 4th, 10.15 a. m., eight groups, thirty-three spots; 6th, 1.10 p. m., six groups, twenty-four spots; 7th, 1.30 p. m., five groups, forty spots; 11th, 12.30 p. m., four groups, twenty-spots; 16th, 4.15 p. m., three groups, seventy spots; 20th, 5.30 p. m., seven

groups, fifty-four spots; 23d, — p. m., five groups, forty-five spots; 25th, 5 p. m., two groups, eighteen spots (hazy); 27th, 3 p. m., four groups, forty-three spots; 31st, 4.30 p. m., four groups, twenty-nine spots.

Mr. H. D. Govey, at North Lewisburg, Champaign county, Ohio, reports sun spots on the following dates: 1st, 3d, 4th, 6th, 7th, 8th, 10th, 11th, 12th, 14th, 16th, 18th, 20th, 22d, 24th, 27th, 28th, 29th, 31st. The spots were numerous and large about the middle of the month.

SUNSETS.

The characteristics of the sky, as indicative of fair or foul weather for the succeeding twenty-four hours, have been observed at all Signal Service stations. Reports from one hundred and sixty-one stations show 4,912 observations to have been made, of which ten were reported doubtful; of the remainder, 4,902, there were 4,103, or 83.7 per cent., followed by the expected weather.

The observer at Cedar Keys, Florida, reports a beautiful and very brilliant red glow, extending to the zenith, at sunset on the 23d.

The following is taken from "The Morning Oregonian," of July 4th, published at Portland, Oregon:

The western sky was colored a bright roseate hue last evening, and all around the horizon and up to the zenith the clouds were fringed with red—a repetition of the "red sunsets" of last summer, which were the subject of so much discussion. This is the first time the phenomenon has been seen in any degree of magnitude this season. About 9 o'clock it was very brilliant and attracted general attention.

DROUGHT.

Arkansas.—Lead Hill, Boone county: although very heavy rains fell during the first half of the month, during the latter half, dry weather prevailed. At the close of the month corn and cotton were suffering for rain.

California.—Cape Mendocino: no rain fell here during July, although precipitation in the form of fog, to the amount of 0.32 inch, was collected in the Signal Service rain-gauge. Pastures have become parched and streams have dried up.

Indiana.—Vevay, Switzerland county: from the 13th to 22d vegetation suffered for rain; on the last-named date a heavy rainfall occurred.

Sunman, Ripley county: the month has been unusually warm and dry.

Kansas.—Elk Falls, Elk county: very dry weather prevailed from the 1st to 29th.

Maud, Kingman county: but little rain fell during the latter part of the month, and vegetation suffered in consequence.

Louisiana.—Grand Coteau, Saint Landry parish, 31st: the corn crop in this vicinity has been injured by drought.

Massachusetts.—Amherst, Hampshire county: at the close of the month a severe drought prevailed; but 0.20 inch of rain fell from the 14th to 31st.

Westborough, Worcester county: the month was hot and dry; the monthly rainfall, 1.56 inches, was the smallest for many years.

Dudley, Worcester county: the month was very dry; the total rainfall amounted to but 1.26 inches.

Mississippi.—Natchez, 12th: although numerous rains have fallen in this vicinity, on many plantations in this (Adams) county there has been no rain for several weeks.

New Jersey.—Vineland, Cumberland county: drought prevailed during the month, causing serious injury to crops.

New York.—Humphrey, Cattaraugus county: very dry weather prevailed at the close of the month; springs and wells were failing.

North Carolina.—Kitty Hawk, 22d: drought has caused injury to crops in this vicinity.

Portsmouth, 9th: vegetation in this vicinity is suffering seriously from drought.

Oregon.—East Portland: very hot and dry weather prevailed in this region throughout the month.

Ashland, 23d: very warm and dry weather prevails in this region; rain is much needed.

Pennsylvania.—Dyberry, Wayne county: the monthly rainfall was only 1.70 inches; crops in this region suffered from drought; streams began to fail, and in some instances completely dried up.

Ashland, Schuylkill county: the protracted drought of July seriously injured the crops; a heavy rain fell on August 1st, but it came too late to be of much benefit.

Wysox, Bradford county, 30th: farmers in this region report unusually dry weather.

Quakertown, Bucks county, 30th: drought prevailed in this section during the month; much inconvenience has been experienced on account of scarcity of water.

Catawissa, Columbia county, 30th: the excessive heat during the latter part of the month caused much injury to vegetation.

Texas.—Indianola, 28th: farmers in the surrounding country state that crops are suffering from drought.

Utah.—Nephi, Juab county: the month of July was the driest for several years; only 0.02 inch of rain fell.

Virginia.—Lancaster, Lancaster county, 30th: the tobacco crop in this county has been seriously injured by drought.

Washington Territory.—Bainbridge Island: July was an unusually dry month.

Wenas, Yakima county, 8th: the excessively warm and dry weather, now prevailing, is causing serious injury to crops.

EARTHQUAKES.

Santa Barbara, Santa Barbara county, California, 9th: five earthquake shocks occurred between 1.20 and 8.15 a. m., each one of long duration and sufficient severity to awaken the greater number of the inhabitants.

Princeton, Colusa county, California: a slight shock of earthquake was felt here at 10.15 p. m. of the 16th.

Obico, Butte county, California: a sharp shock of earthquake occurred at 10.15 p. m. on the 16th. Windows rattled, and people were awakened from sleep. It had been blowing a gale all day previous. No damage is reported.

Centreville, Alameda county, California, 23d: a sharp shock of earthquake was felt here to-day at 12.20 p. m. The movement seemed to be from north to south. No damage was done. A slight shock was also noticed last evening at about 7 p. m.

San José, Santa Clara county, California, 23d: a sharp shock of earthquake, preceded by a rumbling noise, was experienced here at 12.25 this afternoon. The oscillation was from west to east and the duration about three seconds; clocks were stopped, and some little damage resulted to fragile wares in stores.

The following is an extract from "Science" of August 21, 1885:

On Tuesday morning, July 14th, an earthquake occurred in eastern and central Bengal, which, according to "Nature," is said to have been the severest one experienced by the inhabitants for forty years. The shocks lasted for nearly a minute. In Calcutta the houses rocked and cracked, and the plaster fell in large quantities. There was general consternation, the people all rushing out of doors. A wave was raised in the river, like a bore, causing some anxiety with respect to the shipping. Luckily no accident occurred and no damage was done beyond the cracking of the walls of some old houses; but had the shocks lasted some seconds longer the city would probably have been laid in ruins. Some of the up-country stations were less fortunate. At Serajgunge, a chimney belonging to some jute mills fell. In many other places some of the houses fell and people were killed. Twenty-five deaths are reported to have occurred at Aheripore, five at Bogara, eleven at Azimgunge, and seven at Dacca. The following morning another shock was felt at Cashmere, which did some injury. According to the latest reports the earthquake caused altogether seventy deaths at Bengal.

FOREST AND PRAIRIE FIRES.

The following is taken from the "New York Herald" of July 11th and 12th, respectively:

PHILADELPHIA, PENNSYLVANIA, July 10.—A fire started yesterday in the great cranberry belt of Burlington county, New Jersey, swept over hundreds of acres of valuable bog, and is still burning. The continued drought made the grass and vines very inflammable, and the fire spread with lightning-like rapidity. It spread to the west Jersey meadows, containing thousands of acres of grass and cranberries, thousands of dollars worth of the latter fruit, nearly ripe for market, being destroyed. A two-story dwelling, occupied by Joseph

Ware, was burned to the ground, the occupants merely escaping with their lives. An unoccupied house on the Raleigh estate was also burned.

The fire is now travelling toward other bogs at Braddock's Mills, and the people are fighting it with back fires.

PHILADELPHIA, PENNSYLVANIA, July 11.—The fires among the Jersey cranberry bogs, near Atco, on the Burlington county border, are still burning, and threaten to destroy vast tracts of valuable grass and bog land and cedar swamp. All the inhabitants of the vicinity are fighting the flames by building back fires and digging ditches. The dense smoke fills the villages north of Atsion, on the New Jersey Southern railroad, and it is feared that the flames will spread in that direction. The fires can only be extinguished by a heavy rainfall, as the bogs are honey-combed with fire.

Moorestown, New Jersey, 12th: heavy forest fires to the southeast; smoke dense for several days.

The following appeared in the "Buffalo (New York) Express" of July 25th:

CAMDEN NEW JERSEY, July 24.—The Jersey forest fires are now assuming most alarming proportions, and unless a heavy rain soon quenches the flames they will accomplish the destruction of a number of towns and small settlements among the pines of Camden, Burlington, and Atlantic counties. They have never before burned so fiercely, and not since 1838 has the country been so dry and favorable for the spread of the flames.

Yesterday the towns of Atco, Jackson, Sloantown, Waterford, Pestletown, Winslow, Weekstown, Hammonton, Atsion, and a number of other small places in Camden and Burlington counties near the Camden and Atlantic railroad, were surrounded by brush and wood fire, and all the inhabitants were out fighting the flames. Large tracts of cedar timber and several dwellings have already been burned, and many of those fighting the flames have had narrow escapes.

A great cloud of smoke hangs over the burning district, and the country is lighted for miles around at night by the fires. The people are entirely worn out with watching and fighting the flames, and are praying for rain.

Quakertown, Pennsylvania, 22d: fires broke out along the railroad and burned off several grass fields, causing a smoky atmosphere.

The following is taken from the "New York Herald" of July 26th:

CAMDEN, NEW JERSEY, July 25th.—The flames are still sweeping through the timber and bog lands of south Jersey, and a great and despairing cry for rain is going up from the people, who have been fighting the fires for the past two weeks. Should the wind change to the south or southwest nothing can save the villages of Atco and Jackson from destruction.

Late yesterday the fires reached the Maple Island district and came rapidly westward toward the New Jersey Southern railroad. A great effort was made to keep the flames from crossing the railroad track, and all the able-bodied men of Atco and Jackson, recruited with two car loads of section hands sent by the railroad company, ranged themselves along the track, at intervals, for eight miles, to fight the fast advancing flames. They were finally successful in confining the fire to the eastern side of the road, although several thousand railroad ties, piled alongside the track, were destroyed. Word was received at Atco last night that the cranberry bogs of E. Z. Collings, of Camden, and the saw-mill of Elias Russell, near Brooklyn, had been destroyed. The fires in that section are now confined to the big swamp, where they are burning much valuable cedar timber.

Forest and prairie fires were also reported from the following places:

Brownsville, Texas, 18th, north of station.

East Portland, Oregon, 25th to 28th.

INSECTS.

The following is taken from the "New York Herald" of July 11th:

LYONS, NEW YORK, July 10.—The Hessian fly is destroying hundreds of fields of growing wheat in this vicinity. More extensive ravages in grain have never before been known in Wayne and Ontario counties. Hessian flies appeared in the towns of Lyons and Arcadia a month ago, but nothing was done to check their increase. They have now extended many miles in all directions and are moving rapidly toward the northern part of Wayne county. The total amount of destruction of wheat thus far is estimated at over one hundred and eighty thousand bushels. In Lyons, Junius, and Arcadia wheat fields of twenty-five and thirty acres each have been so injured that they appear wholly barren, where three weeks ago a harvest of thousands of bushels was promised. In Junius the devastation has been so complete that farmers there are about to burn the whole of the wheat straw on their lands in order to check, if possible, the advance of the pest. Many farmers have lost so much grain that they will be unable to make payments on the mortgages on their property, and will probably have their farms sold by the sheriff. The greatest fear is that the pest will rapidly destroy the grain until harvest, and that hundreds more of fields will be ruined.

The following is also taken from the "New York Herald" of July 12th:

EAGLE PASS, TEXAS, July 11.—As the north-bound train to-day on the Mexican extension of the Southern Pacific road approached La Aura, in the State of Coahuila, it passed under an enormous cloud of grasshoppers that were flying westward. So dense was the cloud that for half an hour the sunlight was obscured. The train stopped and passengers gathered specimens, which prove to be of the Kansas variety. But few of the grasshoppers alighted near the train. The cloud appeared to be about fifteen miles in length by two miles wide.

Old Mexicans say no such numbers of grasshoppers have been seen in Coahuila in fifty years. La Aura is one hundred and twenty miles south of Eagle Pass. People throughout the entire states of Coahuila and Chihuahua are terror stricken at prospects of famine before them.

North Lewisburg, Ohio, 12th: locusts have about all disappeared.

Port Huron, Michigan, 17th: large swarms of "fish flies" have made their appearance in this city.

Saint Paul, Minnesota, 17th: reports from Fort Buford, Dakota, state that grasshoppers had made their appearance in the vicinity of that place and were devastating the growing crops.

Harvard, Nebraska, 31st: chinch-bugs appeared early in July and did some damage to wheat and corn.

Fort Madison, Iowa, 31st: the grasshoppers are proving destructive to the crops.

Toledo, Ohio, 31st: it is reported that grasshoppers are very numerous in the Maumee valley, and are causing much injury to crops.

The Signal Service observer at Red Bluff, California, reports that locusts had entirely disappeared in that vicinity by the 25th.

METEORS.

Of the meteors observed during the month, the one of the 17th deserves especial mention. It appeared about 9 p. m., and by its unusual brilliancy attracted the attention of many persons at different places throughout several states.

The following are some of the descriptions received in regard to this meteor:

Albany, New York: about 9 p. m. a brilliant meteor was observed to shoot across the sky from east to west, passing south of the zenith. Its apparent size was about two-thirds that of the full moon. Its flight was from two to three seconds duration and it disappeared, after exploding.

Buffalo, New York: a beautiful meteor was observed at 9.05 p. m., being of a pale blue or whitish color which changed to red. It passed from a point two or three degrees east of north, followed by two explosions in quick succession.

Rochester, New York: a brilliant meteor was observed at 9 p. m., leaving a bright trail; it exploded at an altitude of about thirty-five degrees, lighting up the sky with great brilliancy.

Menand station (near Albany), New York: at 9 p. m. a bright flash of light was noticed, suffusing the whole eastern sky like a brilliant flash of heat lightning; it is supposed to have been the reflection caused by a large meteor.

Mountainville, New York: at 9.05 p. m. a brilliant meteor passed from the zenith toward the west, followed by a flash of light like the explosion of a rocket, only more intense.

Le Roy, New York: a meteor was observed at 9.10 p. m., which exploded without noise.

Ithaca, New York: a brilliant meteor was observed, having an apparent diameter much larger than the moon's. Its path was visible from near the North star towards the horizon, where it was obscured by clouds. The path of light that marked its course was fan shaped, exhibiting a brilliant variegation of colors. Large particles were cast off, causing a beautiful shower of different colored fire-balls. The light in intensity was similar to a bright flash of lightning, though of many seconds duration, and was observed by persons sitting near lamps and away from windows.

Factoryville, New York: at 9.03 p. m. a large meteor appeared in the northwestern sky about thirty degrees above the horizon, lasting about fifteen seconds, when it burst and dropped to the earth with showers of sparks and streamers of

beautiful colors. When it exploded the light was so bright that it dazzled the eye.

Syracuse, New York: about 9 p. m. a huge fire-ball or meteor was seen to pass over the city at lightning speed, taking a course from south to southwest. The heavens were brilliantly illuminated, the light exceeding in brightness the most dazzling electric light. About ten minutes after the disappearance of the meteor a strange, low, rumbling sound was heard, which was thought by many to be an earthquake.

Poughkeepsie, New York: about 9 p. m. a brilliant meteor passed over this city from northeast to northwest. It presented various colors, emitting sparks as it passed along, and was heard to explode with a loud noise.

Utica, New York: at 9 p. m., a little north of the zenith, a meteor shot apparently toward the western horizon, increasing in brilliancy as it went. At an elevation of about thirty-five degrees an explosion occurred; no report was audible at this place.

Niagara Falls, Ontario: at 9 p. m. a brilliant meteor was seen dropping suddenly from the heavens and leaving a bright shining tail of fire behind it, apparently forty feet long. The meteor resembled a huge, bright, silver ball, shooting distinct sparks in front of it.

Wellsborough, Pennsylvania: at about 9 p. m. an unusually large meteor flashed across the horizon in a course from east-northeast to west. In passing it emitted a bluish white light of remarkable intensity and brilliancy, followed by a train from twelve to fifteen degrees in length. No report was heard.

Troy, Pennsylvania: about 9 p. m. a very bright meteor passed from the zenith toward the northwest; it was visible for a few seconds.

Wilkesbarre, Pennsylvania: a brilliant meteor was observed, which was remarkable for its size and splendor.

Cape Henlopen, Delaware: a brilliant meteor shot across the eastern sky at 9 p. m.

Beverly, New Jersey: a large meteor fell a little west of north, casting shadows equal to those made by the full moon, and appearing nearly four to six inches in diameter. It displayed a bluish green color, which changed to yellow before it disappeared.

Somerville, New Jersey: a brilliant meteor was seen at about 9.30 p. m. in the north, moving to the west. As it seemed to touch the horizon in the northwest it exploded, displaying a bright light; no detonation was heard.

Bethel, Connecticut: at 9 p. m. a large and bright meteor appeared in the northwestern sky, resembling a ball of fire and illuminating the entire heavens.

Fall River, Massachusetts: a bright meteor of unusual size was observed in the west, at first appearing white, then yellow and green, and finally bursting into several pieces. When first seen it was apparently about the size of a coconut.

At the following places a meteor was also observed on the 17th:

Cooperstown, Palermo, Penn Yan, Oswego, Watertown, and Schenectady, New York; Fallsington and Quakertown, Pennsylvania, and Amherst, Massachusetts.

Other meteors were observed at the following places on the dates set opposite:

Terre Haute, Indiana, 1st, 6th.

Le Roy, New York, 6th.

Beloit and Sussex, Wisconsin, 7th.

Crete, Nebraska, 10th.

North Stamford, Connecticut, 11th.

Pensacola, Florida, 11th.

Salina, Kansas, 12th.

Davenport, Iowa, 12th, 18th, 28th, 31st.

Oleburne, Texas, 14th, 18th, 23d.

Vevay, Indiana, 15th, 21st.

Dover, New Jersey, 15th, 20th, 30th.

Cape Henlopen, Delaware, 16th.

Pittsburg, Pennsylvania, 16th.

Point Pleasant, Louisiana, 18th.

Stockham, Nebraska, 18th.
 New Haven, Connecticut, 19th.
 Jacksonborough, Ohio, 19th.
 Anna, Illinois, 19th.
 Rochester, Minnesota, 19th.
 Ithaca, New York, 20th.
 Archer, Florida, 20th.
 Wausau, Wisconsin, 24th.
 Vermillion, Dakota, 25th.
 Wytheville, Virginia, 28th, 30th.
 Logansport, Indiana, 29th, 31st.
 Toledo, Ohio, 30th.
 Clay Centre, Kansas, 31st.
 Madison, Nebraska, 31st.
 Wentworth, Dakota, 31st.

POLAR BANDS.

Archer, Florida, 16th.
 Brownsville, Texas, 31st.
 Dale Enterprise, Virginia, 9th, 11th.
 Escanaba, Michigan, 25th.
 Fort Bridger, Wyoming, 27th, 28th.
 Gardiner, Maine, 13th, 20th, 26th.
 Montrose, Colorado, 3d, 10th, 23d, 24th.
 Prairie du Chien, Wisconsin, 9th.
 Riley, Illinois, 10th, 19th.
 Rio Grande City, Texas, 29th.
 Salina, Kansas, 11th.
 Wauseon, Ohio, 4th, 9th.

SAND STORMS.

Fort Concho, Texas, 5th.
 Frisco, Utah, 17th, 18th, 19th.
 Willcox, Arizona, 30th.
 Point Pleasant, Louisiana, 31st.

WATER-SPOUTS.

The s. s. "British Prince," Captain Nowell, on July 3d, in N. 39° 34', W. 63° 35', saw two water-spouts.

The bark "Levanter," Capt. A. F. Vesper, on July 16th, in N. 28° 10', W. 87° 15', passed a large water-spout.

The s. s. "Colorado," James Daniels, master, on July 23d, in N. 27° 0', W. 89° 45', observed (sky cloudless) two whirlwinds moving from west to east at the rate of about thirty miles an hour and raising the water to a height of about thirty feet.

The s. s. "Craigendoran," Capt. A. G. Allen, on July 30th, at 1.30 a. m., in N. 37° 0', W. 77° 0', saw a large water-spout moving southward.

Meteorological record of voluntary observers and Army post surgeons, July, 1885.

The maximum and minimum temperatures at stations marked thus (*) are from readings of the ordinary thermometer.

Stations.	Temperature.			Rainfall.	Stations.	Temperature.			Rainfall.
	Maximum.	Minimum.	Mean.			Maximum.	Minimum.	Mean.	
Alabama.	95	66	73.8	2.51	Colorado.	85	24	51.9	0
Greensborough.	95	66	73.8	2.51	Fort Lyon.	105	24	74.8	3.45
Mount Vernon B'ks.	98	59	81.6	4.07	Pueblo.	96	52	74.8	2.83
Arizona.					Connecticut.				
Fort McDowell.	114	70	92.9	trace.	Hartford.	97	53	71.2	4.96
Tucson.				1.00	North Colebrook.	88	36	71.8	2.07
Arkansas.					Southington.	95	53	73	2.28
Mount Ida.	95	57	77.6	6.40	Dakota.				
California.					Fort Meade.	99	45	71.2	1.52
Alcatraz Island.	70	48	59.4	0.02	Fort A. Lincoln.	100	50	72	2.82
Angel Island.	93	49	61	0.02	Fort Pembina.	94	38	65.1	2.51
Cahuenga Valley.	101	50	75.4	0.0	Fort Sisseton.	92	40	69.5	2.79
College City.	108	50	80.0	0.0	Fort Sully.	104	45	75.8	2.10
Fort Mason.	74	53	60.5	0.0	Fort Randall.	107	43	76.5	3.83
Fall Brook.	101	55	70.1	0.0	Fort Totten.	92	41	67.2	5.71
Murrieta.	105	57	79.9	0.0	Fort Yates.	97	38	72.9	2.80
Orville.	96	50	73.8	0.0	Richland.	95	46	68.2	2.50
Oakland.	84	57	63	0.02	Webster.	99	46	74.7	4.97
Poway.	97	60	70.7	0.0	Wentworth.	94	50	70.2	1.34
Princeton.	101	54	76.6	trace.	Florida.				
Sacramento.	97	49	70.5	trace.	Archer.	91	71	75.2	5.91
Salinas.	73	54	61.4	trace.	Limona.	95	70	80.9	9.30
Santa Rosa.	87	57	70.8	0.0	Mayport.	92	73	80.7	5.07
San Rafael (near).	94	41		0.0					

Meteorological record of voluntary observers, etc.—Continued.

Stations.	Temperature.			Rainfall.	Stations.	Temperature.			Rainfall.
	Maximum.	Minimum.	Mean.			Maximum.	Minimum.	Mean.	
Florida—Continued.	0	0	0	Inches	Minnesota.	0	0	0	Inches
Manatee.	92	76	82.3	12.54	Fort Snelling.	94	52	72.7	5.60
Saint Augustine.	92	71	80.7	2.57	Minneapolis.	94	61	72.6	4.52
Tallahassee.	91	74	83	6.55	Northfield.	92	50	72	5.77
Georgia.					Rochester.	100	58		5.62
Milledgeville.	96	63	80.6	3.04	Montana.				
Illinois.					Fort Assinaboine.	98	37	67.5	1.58
Anna.	96	58	79	2.19	Fort Ellis.	97	37	65.9	3.61
Bunker Hill.	102	50	79.3	2.29	Fort Keogh.	104	48	73.1	1.86
Charleston.	102	46	77	2.83	Fort Shaw.	95	38	64.3	2.21
Collinsville.	96	52	74.2	2.37	Nebraska.				
Mattson.	102	58		3.80	Crete.	93	51	73.6	7.25
Peoria.	104	53	81.1	4.73	De Soto.	97	53	75.2	3.55
Marengo.	92	48	71.8	2.07	Fairbury.	102	66	88.3	7.56
Rockford.	93	44	72.5	4.50	Fort Robinson.	100	50	73.6	2.66
Sycamore.	94	53	71.6	4.98	Fremont.	99	55	75.1	3.36
Wilton Centre.	103	39	74.2	4.70	Geneva (near).	100	49	75.3	1.39
Indiana.					Harvard.	110	56		
Fort Wayne.	98	56		2.76	Madison.	95	59	73.2	1.31
Gulford.	99	47	77.1	3.25	Marquette.	93	50	80.0	4.75
Jeffersonville.	97	51	73.2	2.44	Stockham.	100	70	86.4	4.80
Logansport.	102	46	77.6	4.00	Yutan.	100	60	75.6	2.90
Lafayette.	99	43	75.5	4.07	Nevada.				
Mauney.	94	42	73.4	1.56	Carson City.	100	42	72.3	0.0
Sumner.	96	50	79.5	1.30	Fort McDermitt.	94	47	72.6	0.0
Spiceland.	96	47	76.1	1.83	New Jersey.				
Vevay.	99	50	78.4	2.46	Beverly.	100	60	77.2	2.75
Iowa.					Dover.	95	44	71.7	4.95
Cedar Rapids.	96	53	73.9	6.35	Moorestown.	99	60	74.8	3.08
Cresco.	93	57	72.2	5.04	Salem.	100	65	76.5	1.48
Des Moines (near).	97	48	73.9		South Orange.	97	56	73.4	4.00
Manchester.	99	54	75.6	5.03	Somerville.	96	61.3	75.6	7.28
Fort Madison.	100	59		2.40	Vineland.	100	58	78.8	1.29
West Union.	95	52	70.5	5.25	New York.				
Guttenburg.	96	52	71.2	6.08	Auburn.	88	46	70.4	4.64
Indianola.	96	59	78.2	7.00	Cooperstown.	85	50	68.3	3.00
Independence.	92	59	73.7	4.99	David's Island.	97	60	73.3	1.87
Monticello.	100	51	74.4	6.16	Fort Niagara.	88	48	69.8	2.99
Muscataine.	102	49	76.5	5.03	Factoryville.	93	47	69.8	2.99
Ottumwa.	99	59	77.1	4.36	Fort Columbus.	95	57	74.8	3.17
Kansas.					Houghton Farm.	98	43.5	72.4	2.58
Allison.	105	58	76.6	4.01	Humphrey.	90	54	74	2.38
Atchison.	98	62	78.2	3.77	Ithaca.	96	46.5	71.3	2.84
Clay Centre.	100	60	77.4	6.06	Le Roy.	96	44	71.3	2.70
Emporia.	98	57		10.26	Madison Barracks.	90	44	69.8	2.42
Independence.	100	61	78.2	5.02	Menard Station.	92	57	72.7	2.52
Lawrence.	96	56	77.1	6.03	North Volney.	90	52	69.6	4.35
Manhattan.	99	56	77.5	4.99	Palermo.	91	50	67.5	3.85
Oswego.	99	60	78.7	8.95	Plattsburg B'ks.	95	50	69.1	4.04
Towka.	100	61	78.5		West Point.	100	50	74.1	3.60
Salina.	98	62	79.5	7.02	White Plains.	88	59	73.9	5.30
Sterling.	99	60	76.8	6.08	New Mexico.				
Sherlock.	99	63	77.2	4.71	Fort Wingate.	96	49	70.4	2.28
Wellington.	102	64	70.6	4.94	Fort Union.	91	48	70.0	2.51
W. Leavenworth.	99	61		4.94	Gallinas Spring.	93	60		1.65
Wyandotte.	99	60	79.7	4.76	Puerto de Luna.	99	63	79.0	0.65
Kansas.					North Carolina.				
Grand Coteau.	94	69	82.7	5.21	Chapel Hill.	100	61	79.6	3.95
Luling.	94	69		5.94	Flat Rock.	87	49	71.1	2.84
Point Pleasant.	96	67	84	4.63	Lincolnton.	88	60	80.4	3.77
Maine.					Balch.	98	63	80.0	2.00
Cornish.	89	54	67.3	3.64	Staten Island.	93	60	80.4	4.47
Fort Preble.	86	57	70.0	3.40	Weldon.	100	62	80.5	3.86
Gardiner.	83	50	67.3	1.73	Ohio.				
Orono.	86	54	67.8	4.70	Cleveland.	91	53	72.9	4.18
Missouri.					College Hill.	103	57	80.5	2.60
Carthage.	90	60	80.8	4.31	Gallatinville.	92	43	69.9	5.55
Centerville.	97	53		5.53	Hiram.	92	54	93.1	5.37
Conception.	95	55	76.6	1.75	Jacksonburg.	100	52	79.6	3.65
Independence.	92	54	74.6	6.45	North Lewisburg.	99	51	75.8	2.45
Pierce City.	98	59	76	8.70	Portsmouth.	95	47	75.3	2.12
Springfield.	94	59	77.6	9.14	Ruggles.	94	52	71.3	3.15
Massachusetts.					Tiffin.	95	53	76.5	3.21
Amherst (Agr'l St'n).	93	41	68.4	2.07	Wauseon.	98	46	74.4	3.03
Deerfield.	93.5	42.3	70.5	2.25	Westerville.	95	44	73.2	3.53
Princeton.	89.5	46	68.5	4.23	Yellow Springs.	98	54	74.2	3.16
Rowe.	86	48	67.8	4.16	Oregon.				
Somerset.	104	44	75.5	2.37	Albany.	98	56	68.4	0.0
Taunton.	94	50	71.9	2.56	East Portland.	96	56		0.0
Williamstown.	76.9	42.7	64.8	2.87	Eolo.	98	62	66.9	0.0
Westborough.	96	45	75.2	1.56	Pennsylvania.				
Worcester.	87	53	68.9	2.10	Catawissa.	96	50		3.26
Maryland.					Dyberry.	93	40	69.2	1.70
Cumberland.	95	56	74.5	1.01	Easton.	101	64	82.5	2.63
Emmitsburg.	98	59	70.6	2.10	Fallingston.	97	59	74.1	4.05
Fort McHenry.	97	66	77.7	2.15	Grampian Hills.	94	52	72.1	6.14
Fallston.	97	52	74.5	3.33	Mahanoy Plane.	97	58	77.5	1.75
Woodstock.	98	50	76.2	3.98	South Bethlehem.	103	46.4	72.5	3.48
Great Falls.	100	54	78.4	0.29	West Chester.	98	53	76	0.93
McDonough.	93	54	76.3	3.95	Wellsborough.	96	54	71.5	3.77
Michigan.					Wilkesbarre.	97.2	42	72.4	3.01
Birmingham.	90	51		4.49	Troy.	96.5	40	70.5	1.80
Buchanan.	96	54	76.3		South Carolina.				
Boone.	95	47	66.9	3.61	Pacolet.	85	67	78.8	1.22
Fort Brady.	88	41	65.6	2.61	Spartanburg.	80	43		
Hudson.	96	47	73.4	4.06	Tennessee.				
Kalamazoo.	91	49		2.28	Ashwood.	98	56	77	3.60
Lansing.	91	47	73.3	2.04	Austin.	96	52	78.3	4.51
Manistiquette.	92	41	64.3	1.02	Milan.	97	58	78	3.71
Thorntown.	94	55	72.9	3.10	Texas.				
Traverse City.	92	44		2.30	Austin.	98	52	84.6	0.05
					Corpus Christi.	94	79		
					Cleburne.	95	68	81	1.32